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NOTE FOR: Harry Rowen
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Is this a cockamamy "payoff for American industry," or should we order a copy of High Frontier ($15)?

STAT

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cc: L. Gershwin

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Special Report: Defense Strategy

Selling the High Frontier Defense Strategy

Retired U.S. Army General Daniel O. Graham answers questions and outlines his "High Frontier" defense strategy to counter the growing Soviet threat in this exclusive DE interview.

Lt. General Daniel O. Graham, U.S. Army Retired, has been as active during 1982 as during his military career, when he was the chief of the Pentagon's Defense Intelligence Agency, and a deputy director of CIA. Graham spends his considerable energies these days promoting High Frontier, his new national defense strategy. He is a personable, articulate advocate. When High Frontier was announced at a March, 1982 press conference, Graham told reporters that it could "nullify or substantially reduce the growing threat posed by an unprecedented Soviet military build-up; replace the dangerous doctrine of Mutual Assured Destruction with a strategy of Assured Survival; and provide both security and incentive for realizing the enormous industrial and commercial potential of space."

Lt. General Graham's crusade has generated controversy. Graham defends his concept in an exclusive interview with DE contributing editor David Atlee Phillips.

DE: General Graham, you are the chief architect of and salesman for High Frontier. How did it begin?
GRAHAM: After the Reagan election we began looking for answers to questions which should have been answered during the campaign. The Reagan people had labeled the U.S. defense posture as a failed strategy, and they called for a new one. We decided the basic answer was to make a technological end-run of the Soviets. The solution was not in adding more tanks, more guns, more planes, more everything. We saw bankruptcy at the end of that incremental approach, something the Congress would not support. We also saw strategic failure because the Soviets are already producing weaponry like sausages. We decided the answer was to be found in space.

DE: What led you into space?
GRAHAM: That's where our fundamental advantage over the Russians exists. In the shuttle we have the best space transportation system. Another fundamental advantage is that we know how to miniaturize; a pound of what we put into space will do five or six times what a Soviet pound up there can. Those are not just additive but compounding advantages—they give us a true technical head start in space. We looked for a way to benefit from that lead. We decided that militarily the best plan was to put up a spaceborne defense. The civil aspect of High Frontier came along naturally, since the core technology for military and non-military industrialization of space is the same. We believed that both military and civilian goals could be achieved with a truly new national strategy. And that we could finally get away from the old idea of Mutual Assured Destruction—MAD.

DE: What is MAD, and what's wrong with it?
GRAHAM: Robert McNamara articulated MAD back in the 1960s. He didn't call it MAD then, but he does *now*. MAD is the notion based on the proposition that military technology is going to level off into a situation where offense is absolutely dominant and nothing will ever happen to change that. That the only way to prevent nuclear war is to threaten punishment after it begins—that a lot of Russians will be killed if they start the nuclear war. A corollary to that has been that it's a bad thing to defend civilian populations in the MAD concept, because people are hostages. It is the anticipated cataclysmic nature of the nuclear exchange, according to MAD thinking, which prevents it from happening. The Soviets never bought that. They called it bourgeois naiveté—and they're dead right. They've spent more on strategic defense in the past 15 years than we've spent on strategic weapons. MAD is very much like the scene in an old Western movie where two guys face each other on dusty Main Street and it's a matter of who goes for his gun first. You can't have a more unstable international situation than that, but that's what we've got with MAD.

DE: You propose to replace MAD with a program you call Assured Survival. What is it?
GRAHAM: A spaceborne defense capability. One which would replace our present point defense, which can be

DEFENSE STRATEGY...Pg. 8-F

DEFENSE STRATEGY...Continued

overwhelmed by numbers if the Soviets increase their arsenal. In a spaceborne defense where hostile missiles are destroyed in their trajectory you change an arithmetical computation by the attacker into a terribly complex calculus: not only do the attackers not know how many missiles will get through, they don't know which ones. That makes a tremendous difference. Happily, that new equation doesn't require deployment of a single nuclear weapon. We didn't search for a non-nuclear solution, but it turned out to be the most sensible and practical one. I had thought it would involve lasers; but it doesn't. I learned all this from the team of experts we assembled for our project.

DE: What kind of a team? How did you put it together?
GRAHAM: We raised a quarter of a million dollars and we hired them. Strategists, scientists, engineers. Our chief scientist was Dr. Arnold Kramish, who was a member of the Manhattan Project. Dr. Edward Teller worked with us for a while (I think Ed was a little disappointed that we didn't come up with a nuclear or advanced science solution). Major General Stewart Meyer, former Commander of the Army's Ballistic Missile Defense effort in Huntsville, was our man on point defense. Major General Bob Richardson, who worked at the Air Force Systems Command, advised us on the problems of acquisition. Dr. Mose Harvey, who edits *The Soviet World Outlook*, was our analyst on Soviet reaction. On the non-military side Dr. Jim Daugherty of the University of Virginia predicted the probable European reaction to High Frontier. Dr. Peter Glazer of Arthur D. Little (he was the architect of the solar power satellite system) was our expert on civil space systems. . . . More than a score of experts.

DE: Your report, "High Frontier: A New National Strategy," lists nine requirements for implementing your program. Let's examine them one at a time. The first is "a point defense for U.S. ICBM silos."
GRAHAM: A point defense—the way we describe it—is one that will deny the Soviets any assurance they will catch a U.S. missile in its hole. It protects something that's already hardened, and should not be expected to protect cities. It's not expensive if restricted to such a simple mission. For one-fourteenth of what the Army would spend on such a point defense, we can protect 200 Minute Men, MX, whatever kind of missile. But this kind of point defense should be considered only if a broader spaceborne defense program is envisaged for the future.

DE: Your second requirement is for a first generation spaceborne ballistic missile defense deployable within five or six years.
GRAHAM: We didn't want to depend on something in the year 2000. That might be defeated in reality by Soviet reaction, and certainly would be defeated bureaucratically by people who would "threat it" to death with fancy predictions of what the Soviets *might* do. We've suggested instead taking technology off the shelf. The scheme would be to orbit a rather large number of inexpensive satellites which would use the same kill mechanism—a kinetic energy kill—that has been developed for our anti-satellite system. The same mechanism, essentially, that the U.S. now plans to carry up on an F-14 for launch at a satellite. That's expensive, because the cold target requires a cryogenically-cooled sensor, which cannot be maintained for long periods in orbit. We'd be going after a hot target, on the rise up out of the Soviet Union. The sensor would be cheaper and would stay alive for the life of the satellite.

DE: The third requirement is for a second space defense system deployable within 10 or 12 years.
GRAHAM: The mid-course defense would be intended to catch Soviet missiles in their coast stage, after warheads had been dispersed from the carrier but before reentry. That's a cold target again, and would require more sophistication in the old system, with improved sensors which can be kept longer in orbit.

DE: High Frontier also needs "a utilitarian manned military space control vehicle." How would you describe that?
GRAHAM: I describe it as a space jeep. An improved vehicle that can go anywhere to perform a variety of tasks and that doesn't require tons and tons of fuel. So we need what we call a High Performance Space Plane. One that can maneuver enough to slew into new orbits.

DE: . . . "a civil defense program." What would be different about it?
GRAHAM: It would differ sharply from present programs, given the new defensive system. The most optimistic calculation for High Frontier is that it could reduce a Soviet long-range missile attack by 96 percent. Any sharp reduction in nuclear explosions in the U.S. would mean we could disregard the apocalyptic visions we've had to contend with, and prepare for something more manageable.

DE: High Frontier also calls for improved, less expensive space transportation.
GRAHAM: The limiting factor in space development today is that it costs about $1,000 per kilogram, or about $500 per pound, to get hardware up there. Both Boeing and Rockwell know how to reduce that to about $20 per pound in stationary orbit—23,000 miles out—and if that is achieved it will open the flood gates for industrialization of space. So we believe NASA should not try to run a government railroad into space with today's shuttle, but should encourage private development (except where classified, government operations must be conducted). NASA should start working on the successor to the DC-3 of space, the shuttle, until they come up with the space age 747. This new space transport vehicle might look like two shuttles, one to boost the other into space and then return to earth, so we wouldn't continue to lose the big tank, the most serious price we pay for each launch now.

DE: Another High Frontier requirement is for a manned space station in low Earth orbit.
GRAHAM: Yes. The principal objective here would be to support the private sector: laboratories are needed out there for experimentation in the possibilities of industrial application of the unique environment of space, such as

DEFENSE STRATEGY...Pg. 9-F

DEFENSE STRATEGY...Continued

zero-gravity and completely sterile conditions. It would also be a secure location for military activities. Less vulnerable. Some nut with a hand grenade couldn't get at it.

DE: High Frontier also lists energy systems in space as a requirement.

GRAHAM: All we propose in that arena is imaginative R&D, to push energy system development out of its present doldrums.

DE: Finally, High Frontier seeks government assistance in developing commercial business opportunities in space, followed by encouragement to become independent. What does that mean?

GRAHAM: It means that we expect the government to do what it should do in the development of any frontier, as in the American West. Government should explore the wilderness; it should help in the construction of transportation as it did with the railroad and the Erie Canal; and it should protect the early settlers so they won't be scalped by the Indians—in this case, the Soviets.

DE: If High Frontier becomes a reality, and the Soviets push the big red button, how effective a defense would it be? You mentioned 96 percent destruction of missiles?

GRAHAM: That's the high side of possibilities. I laid the requirement of 20 percent on the technicians, because taking out that many Soviet missiles on the rise would be a strategic bargain. I'm certain we could get 50 percent.

DE: When could High Frontier be operational?

GRAHAM: For the ground-based point defense, two or three years. We can have the first layer of spaceborne defense in place—if we don't try to "perfect" it to death—in five or six years. And the mid-course capability in ten to 12 years.

DE: You have described what sounds like an inordinately expensive program. How much would it cost?

GRAHAM: The lid we laid on the defensive systems was that they not exceed the cost of MX racetrack, which is between $50 and $80 billion. We're absolutely sure we can meet that. If we're right, the program is almost a Godfather offer. If we have underestimated by 200 percent we're still offering a strategic bargain.

DE: If High Frontier succeeds, will the Soviets implement a similar system?

GRAHAM: Absolutely. Our advantage in space, though, would make it difficult for them to really copy us. But what if they do, somewhere down the line? I say, fine. Then we would have a stable situation—a "we can't first-strike you and you can't first-strike us" situation, which is a helluva lot better than we have now.

DE: In June, Secretary of Defense Casper Weinberger directed the Air Force to deploy antisatellite weapons within five years. At the time Weinberger said, "We should acquire the capability to negate, as well as disrupt, hostile space systems." Your proposal calls for a grid of 432 killer satellites. How would High Frontier relate to Weinberger's proposal?

GRAHAM: Right down the line with it. Weinberger's talking about hostile objects out there *now*. If the Russians decided to attack us, there would really be some even more hostile objects out there—all those ICBMs. If we can take out—and I believe we can—accelerating *missiles*, then taking out non-accelerating hostile satellies will be a piece of cake.

DE: What would High Frontier mean to U.S. defense contractors, in terms of sales of products?

GRAHAM: If we move seriously into space the payoff for American industry will be tremendous. We're likely to have the same kind of spin-off to industry that we had when we were just doing "whoopee things," like going to the moon and photographing Saturn's rings. That spin-off was six dollars for industry for each dollar the government spent on space. If the President had announced he was going High Frontier I would have bought every piece of high-tech stock I could find.

DE: "If the President had announced . . ."

GRAHAM: When the most recent shuttle landed, President Reagan was there, and he mentioned the enormous opportunities for U.S. security and U.S. business to be found in "the ultimate frontier." That's what we're talking about. But it's up to the President. It's not a decision to be made by scientists or soldiers, because it's a political decision. The President would have to override the objections of the bureaucrats who feel their turf would be threatened, but he would have popular support. Even from the Ground Zero people, because no nukes are involved. If the President said "do it," and made sure the technology works, it would succeed. Eisenhower did that: the Navy came up with a concept called Polaris. Half the Navy people didn't know if it would work, and the other half didn't know if they wanted it to work. Eisenhower liked the idea and he said *go do it!* And in less than four years the first Polaris put to sea.

DE: There is an alternate, related space program called "Strategic Defense Orbiter Concept." It calls for a future capability which would convert any ICBM to a land-based weapon that deploys into space if attacked. Is it a valid concept?

GRAHAM: No. It only reinforces the old offense-only strategy. The only thing that would accomplish would be to get missiles off the ground before they were hit by an incoming strike—they would still be committed to an offensive mission.

DE: In a speech in Des Moines, according to a newspaper account, you said that High Frontier had been received warmly at high levels of government, but coolly from bureaucrats. Who are the bureaucrats?

GRAHAM: I was one of them. I was in uniform, but I was a bureaucrat, so I know their reasoning processes. They're skeptical because High Frontier, if accepted, is going to have a profound effect on programs and policies. In the Department of Defense the Army has had the strategic defense mission for 20 years. Now it may be turned over to someone else: the Air Force or, if they don't get off their duffs, to a Space Force. I've upset the apple carts of program managers all over the place. On the policy side, even in the Department of Commerce. I've managed to anger some portion of every bureaucracy in Washington.

DE: How will our European allies react to High Frontier?

GRAHAM: I think the reaction will be good, because High Frontier would tend to restore the nuclear umbrella that—for good and bad reasons—the Europeans have always enjoyed.

DEFENSE STRATEGY...Pg. 10-F

NATURE
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Nuclear war games -

No survivors?

Moscow radio last week broadcast a virulent attack on Dr Edward Teller, the American physicist, for having published in *Readers' Digest* an article which suggested that nuclear war would not obliterate all life on this planet.

The broadcast, scripted by the official news agency TASS, alleged that Dr Teller has a vested interest in the arms race, since its "reversal" would deprive him of his "cushy job" as a presidential aide. Teller's article, TASS alleged, was intended to "dampen the truly immense public interest all over the world" in the Soviet peace proposals tabled at the the United Nations.

The Soviet proposal for a total test-ban treaty to create a more favourable atmosphere for arms limitation negotiations ran into considerable opposition from the United States, which maintains that the problems of verifying compliance with any such agreement should be solved before negotiations are started. In fact the Soviet Union put forward a package of verification proposals, including the international exchange of seismic data and the right of signatories to any such treaty to demand an on-site inspection of any suspected explosion in the territory of a fellow signatory. Since the Soviet proposals were backed up by carefully orchestrated panegyrics in the Soviet press the TASS writers may have genuinely assumed that the US rejection of these initiatives has a similar media back-up. Teller's role as "father of the hydrogen bomb" is stressed and the activities of the Pugwash movement ignored. His attempts to refute some of the more fantastic myths of what nuclear war would entail, his quoting of instances from Hiroshima and Nagasaki ("bridges were open to traffic a day after the blast, trains ran on the second day and streetcars were operating on the third"), and his suggestions on how to remove radioactive contamination are construed, by TASS, as "cynicism and misanthropy".

In fact, Teller's thesis that there would be a significant number of survivors of a war involving nuclear weapons and other "means of mass destruction" has tacitly been accepted by Soviet civil defence planners. Recent reports of civil defence exercises, including practice evacuation of schools and hospitals, speak of the need for further training in the use of "means of protection against weapons of mass destruction". A broadcast on Vilnius radio last summer by a civil defence official went into considerable details of the various gamma and neutron radiation monitors available to establish contamination of the population and of livestock, machines and equipment — suggesting precisely the same swift return to quasi-normality after nuclear bombardment for which Teller was castigated by TASS.

Vera Rich

DEFENSE STRATEGY...Continued

DE: What about the Third World? Will we have to worry about polemics at the United Nations?

GRAHAM: Yes, because the Soviets will brand High Frontier as "space imperialism." They haven't used that term yet, but they will. It's going to take some diplomatic skill to make the Third World understand that the space technologies we're talking about will be a benefit to them. And they shouldn't try—as Ecuador has—to claim space 22,300 miles up because High Frontier happens to pass over Ecuador.

DE: How can you be sure the Soviets will decry High Frontier?

GRAHAM: A couple of weeks after the first U.S. space shuttle was launched, the Soviets introduced at the United Nations a proposed treaty which said "Thou Shall Not Put Weapons in Space"—rather hypocritical, considering they have the only space weapons. When I first went public with High Frontier I had about 35 seconds on each of two U.S. television networks. But I had six minutes on Moscow television. Not about what I was proposing, but what a miserable S.O.B. I was, that I was proposing an *inhuman* space weapons system, despite the fact that High Frontier would not kill any Russians.

DE: How can our readers obtain a copy of the 175-page report on High Frontier?

GRAHAM: By writing to High Frontier, 1010 Vermont Avenue, Washington, D.C. 20005. It's $15. And we have a 28-minute documentary film which will be available soon for $300, or a videotape version ready now for $60.

DE: Have you had any concrete indications of interest in High Frontier from American high-tech corporations?

GRAHAM: Yes, we have. Boeing, most notably. Rockwell, Tracor, LTV, Vought, Northrop, McDonnell Douglas. One aspect of High Frontier that appeals to American industry is that it is an assault on the Neo-Luddities—the mass of people who these days for one reason or another object to *everything* technical. Because it's dangerous, because it's going to harm the environment, or something. But High Frontier is a high-tech answer to that kind of objection. The nuclear-freeze people have a terrible time with High Frontier because it doesn't require nuclear weapons; it even dampens the enthusiasm for adding more nukes by either side. It destroys the phony set of options they put forth—such as "Burn or Freeze." And it's a future strategy which requires only the signature of Ronald Reagan to get on track, and not the signatures of Ronald Reagan *and* Leonid Brezhnev.

DE: A major argument against High Frontier has been —and this a quote—"it might make the actual fighting of a nuclear war more feasible." How do you respond to that criticism?

GRAHAM: Any capability to defend yourself can be construed as something dangerous. It's like saying we shouldn't put seat belts in cars because that makes drivers less responsible, and they're more likely to kill each other. It's an old argument. In fact, High Frontier will act in exactly the opposite direction. It will mean early on to the Soviets, and later on to us—if they match the capability—that the rationale for a military attack is destroyed. So High Frontier will sharply reduce the possibility of nuclear war, not increase it. ■